

S2862 SAT-STA-20170726-00109 IB2017002031  
Terra Bella Technologies Inc.  
SkySat



File # SAT-STA-20170726-00109  
Call Sign S2862 Grant Date 10/12/17  
(or other identifier)  
Term Dates period of  
From 10/12/17 To: 180 days  
Approved: *Stephen J. Duall*  
Stephen J. Duall  
Chief, Satellite Policy Branch

Approved by OMB  
3060-0678

Date & Time Filed: Jul 26 2017 1:36:56:233PM  
File Number: SAT-STA-20170726-00109  
Callsign:

FEDERAL COMMUNICATIONS COMMISSION  
APPLICATION FOR SPACE STATION SPECIAL TEMPORARY AUTHORITY  
FOR OFFICIAL USE ONLY



APPLICANT INFORMATION

Enter a description of this application to identify it on the main menu:  
Skysat temporary change in Telemetry Frequency

1. Applicant

Name:	Terra Bella Technologies Inc.	Phone Number:	720-238-5634
DBA Name:		Fax Number:	
Street:	346 9th St.	E-Mail:	craig@planet.com
City:	San Francisco	State:	CA
Country:	USA	Zipcode:	94103 -
Attention:	Craig Scheffler		

**ATTACHMENT TO GRANT**  
Terra Bella Technologies Inc.  
IBFS File No. SAT-STA-20170726-00109

<b>IBFS File No(s):</b>	SAT-STA-20170726-00109	<p style="text-align: center;"><b>GRANTED – With Conditions</b></p>  <p style="text-align: center;"><b>International Bureau Satellite Division</b></p>			
<b>Licensee/Grantee:</b>	Terra Bella Technologies Inc.				
<b>Call Sign:</b>	S2862				
<b>Satellite Name:</b>	SkySat-8 through SkySat-13				
<b>Orbital Location: (required station- keeping tolerance)</b>	NGSO at altitudes between 400 km and 630 km				
<b>Administration:</b>	United States of America				
<b>Nature of Service:</b>	Telemetry, Tracking and Control				
<b>Scope of Grant:</b>	Special temporary authority for a period of 180 days to allow SkySat-8 through SkySat-13 satellites to conduct telemetry downlink while they are brought into service after launch using the following center frequencies: 8374.25 MHz, 8374.50 MHz, 8374.75 MHz, 8375.25 MHz, 8375.50 MHz, and 8375.75 MHz. <sup>1</sup>				
<b>Service Area(s):</b>	See Scope of Grant				
<b>Frequencies:</b>	8025-8400 (space-to-Earth) (remote sensing data)				
<p><b>Unless otherwise specified herein, operations under this grant must comport with the legal and technical specifications set forth by the applicant or petitioner and with Federal Communication Commission's rules not waived herein.</b></p> <ol style="list-style-type: none"> <li>Operations under this STA must be in compliance with the terms of the Memorandum of Agreement between Terra Bella and the National Aeronautics and Space Administration pertaining to operation in the frequency band 8025-8400 MHz.</li> <li>Transmissions of telemetry data in the 8025-8400 MHz frequency band may only be made to and when within the line of sight of the earth stations approved for such transmissions under the existing Memorandum of Agreement between Terra Bella and NASA, or any successor agreement.</li> </ol>					
<p>Licensee/grantee is afforded thirty (30) days from the date of release of this action to decline the grant as conditioned. Failure to respond within this period will constitute formal acceptance of the grant as conditioned. This action is taken pursuant to Section 0.261 of the Commission's rules on delegated authority, 47 CFR § 0.261, and is effective upon release.</p> <p>Station licenses are subject to the conditions specified in Section 309(h) of the Communications Act of 1934, as amended, 47 U.S.C. § 309(h).</p>					
<b>Action Date:</b>	October 12, 2017				
<b>Term Dates</b>	<b>From:</b> October 12, 2017	<b>To:</b> period of 180 days			
<b>Approved:</b>	 Stephen J. Duall Chief, Satellite Policy Branch				

<sup>1</sup> Terra Bella will assign each of the six new SkySat satellites one of the listed center frequencies immediately after launch. After approximately 30 to 60 days, the satellite orbits will have diverged sufficiently so that earth stations will be able to distinguish each individual satellite and all satellites will be commanded to transmit on the authorized center frequency of 8375.00 MHz for regular operations. Terra Bella requests special temporary authority for 180 days to accommodate possible launch delays. Narrative at 1.

<b>2. Contact</b>			
<b>Name:</b>	Craig Scheffler	<b>Phone Number:</b>	720-238-5634
<b>Company:</b>	Planet Labs Inc.	<b>Fax Number:</b>	
<b>Street:</b>	346 9th St.	<b>E-Mail:</b>	craig@planet.com
<b>City:</b>	San Francisco	<b>State:</b>	CA
<b>Country:</b>	USA	<b>Zipcode:</b>	94103 -
<b>Attention:</b>		<b>Relationship:</b>	Same
(If your application is related to an application filed with the Commission, enter either the file number or the IB Submission ID of the related application. Please enter only one.) 3. Reference File Number SATMOD2015040800019 or Submission ID			
4a. Is a fee submitted with this application? <input checked="" type="radio"/> If Yes, complete and attach FCC Form 159. If No, indicate reason for fee exemption (see 47 C.F.R. Section 1.1114). <input type="radio"/> Governmental Entity <input type="radio"/> Noncommercial educational licensee <input type="radio"/> Other (please explain):			
4b. Fee Classification   CXW – Space Station (Non-Geostationary)			
5. Type Request  <div style="display: flex; justify-content: space-around;"> <span><input type="radio"/> Change Station Location</span> <span><input type="radio"/> Extend Expiration Date</span> <span><input checked="" type="radio"/> Other</span> </div>			
6. Temporary Orbit Location		7. Requested Extended Expiration Date	

8. Description (If the complete description does not appear in this box, please go to the end of the form to view it in its entirety.)		
Request temporary authorization to change the telemetry downlink frequency during launch and satellite commissioning phase.		
9. By checking Yes, the undersigned certifies that neither applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application"; for these purposes. <span style="float: right;"> <input checked="checked" type="radio"/> Yes           <input type="radio"/> No         </span>		
10. Name of Person Signing Craig Scheffler	11. Title of Person Signing Spectrum Manager	
12. Please supply any need attachments.		
Attachment 1: Narrative for STA	Attachment 2:	Attachment 3:
WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND / OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).		

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## **EXHIBIT A - NARRATIVE STATEMENT**

Terra Bella Technologies Inc. (Terra Bella), pursuant to Section 25.120 of the Federal Communications Commission's (FCC's or Commission's) Rules, 47 C.F.R. § 25.120, hereby requests Special Temporary Authority (STA) for short-term modification of the telemetry downlink frequencies on six commercial remote sensing satellites, SkySat-8 through SkySat-13, while they are brought into service after launch. The satellites are scheduled to be launched on October 17, 2017 on a Minotaur-C launch vehicle as previously authorized by the commission<sup>1</sup>. Approval for this STA application would be consistent with a previous Commission action in 2016 for a similar STA with an identical purpose for Skysats-4 through Skysat-7<sup>2</sup>.

To accommodate possible launch delays, Terra Bella seeks temporary authority for a period of 180 days commencing on October 17, 2017, the expected launch date. The requested temporary authority, however, would be utilized only until routine communications links with the satellites are established, which is expected to be a period of no more than 60 days after launch. Terra Bella outlines below its need for the requested STA and the reasons that this request should be granted expeditiously.

Terra Bella currently operates seven commercial remote sensing satellites, SkySat-1 through SkySat-7, under FCC Call Sign S2862, as part of a non-geostationary orbit (NGSO) Earth Exploration Satellite Service (EESS) high-resolution imagery satellite system<sup>3</sup>. The requested STA would apply to SkySat-8 through SkySat-13, which are expected to be launched on October 17, 2017.

On the launch date, SkySat-8 through SkySat-13 will be released by the launch vehicle in a cluster that is so closely spaced that ordinary telemetry transmissions from the different satellites—which will use the same frequencies—would be indistinguishable at earth stations for the first few days on-orbit. To facilitate the identification and monitoring of each individual satellite, Terra Bella therefore requests authority to temporarily modify the telemetry downlink frequency (Channel ID TTC1) for each of the new satellites to a frequency that is unique but close to the frequency authorized for operations under Call Sign S2862. Without the requested temporary modification, all six satellites could be transmitting at the same time, on the same frequency, and thus interfering with each other.

Specifically, Terra Bella requests authority to assign each of the six new satellites one of the following frequencies for telemetry transmissions immediately after launch:

- 8374.25 MHz
- 8374.50 MHz
- 8374.75 MHz
- 8375.25 MHz
- 8375.50 MHz
- 8375.75 MHz

Each of the proposed frequencies is within the 8025-8400 MHz band allocated to EESS as well as within 750 kHz of the telemetry downlink frequency of 8375.00 MHz currently authorized for Call Sign S2862. Assuming nominal conditions, after approximately 30 to 60 days, the satellite orbits will have diverged enough so that the earth stations are able to distinguish each individual satellite. At that time, the satellites will be commanded to transmit on the licensed frequency of 8375.00 MHz for permanent operations.

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<sup>1</sup> File No. SAT-MOD-20150408-00019, granted August 31, 2016.

<sup>2</sup> File number SAT-STA-20160803-00076, granted Sept 14, 2016.

<sup>3</sup> File No. SAT-LOA-20120322-00058 (SkySat-1 and SkySat-2) and File No. SAT-MOD-20150408-00019 (SkySat-3 through 7)

Terra Bella incorporates by reference all of the technical showings it made in the license modification application (both on Form 312, Schedule S, and in Exhibit 43), and confirms that operation under this STA will not vary from such parameters with the exception of narrowband telemetry signals identified herein. The temporary frequencies would be no less compatible with other satellite missions than the licensed frequency, since they are narrowband and in close proximity to the currently authorized telemetry downlink frequency of 8375.00 MHz. There would also be no changes to other parameters currently authorized for operations under Call Sign S2862, including modulation, bandwidth, and power of the telemetry transmitters.

Grant of this STA will serve the public interest by facilitating Terra Bella's operation of six additional, high-resolution imagery satellites that are complementary to the existing satellites, SkySat-1 through Skysat-7, thereby enhancing competition and expanding U.S. capabilities in the market for commercial remote sensing data. Terra Bella's innovative approach—using small, lightweight, and low-cost satellites—allows the company to meet the growing demand for high resolution imagery in a cost-effective, timely manner, and deployment of the proposed satellites will further enhance Terra Bella's EESS capabilities.

In summary, and on the basis of the information provided herein and in File No. SAT-MOD-20150408-00019, Terra Bella requests special temporary authority to modify the telemetry downlink frequencies on six commercial remote sensing satellites, SkySat-8 through SkySat-13, for a period of 180 days commencing on the expected launch date of October 17, 2017.